

rotating the barrel cam between a first position and a second position thereby actuating the half-nut between the engagement position and the disengagement position.

13. The method according to claim **12**, further comprising disposing a user-controlled actuator on a plunger head assembly.

14. The method according to claim **13**, further comprising operatively coupling an elongated shaft to the user-controlled actuator such that actuation of the user-controlled actuator rotates the elongated shaft around an axis extending along a length of the elongated shaft.

15. The method of claim **12**, further comprising monitoring a pressure of the agent being dispensed from a syringe with a pressure sensor in a plunger head assembly.

16. The method of claim **12**, further comprising retaining a barrel flange of a syringe in a barrel flange clip.

17. The method of claim **16**, further comprising detecting a presence of the syringe with an optical sensor and a light source.

18. The method according to claim **12**, further comprising configuring a syringe pump to communicate with a monitoring client.

19. The method according to claim **12**, further comprising operating a syringe pump in a fail operative mode for at least a duration of a therapy and monitoring a volume being infused based on output from at least one set of redundant sensors when part of the at least one set of redundant sensors is compromised.

20. The method according to claim **13**, further comprising operatively coupling a knob of the user-controlled actuator to a shaft.

21. A method for administering an agent to a patient, comprising:

positioning an elongated shaft within a plunger head assembly of a syringe pump and operatively coupling

the elongated shaft to a user-controlled actuator such that actuation of the user-controlled actuator rotates the elongated shaft about an axis of elongation of the elongated shaft;

positioning a leadscrew within a leadscrew void of a half-nut housing of the syringe pump;

positioning a half-nut having a cam follower surface, a half-nut slot, and half-nut threads at an end adjacent to the leadscrew void within the half-nut housing;

engaging a sliding block assembly including the half-nut housing and the half-nut with the leadscrew of the syringe pump so as to move along the leadscrew in accordance with rotation of the leadscrew by sliding the half-nut between an engaged position where the half-nut threads engage threads of the leadscrew and a disengaged position where the half-nut threads are disengaged with those of the leadscrew; and

rotating a barrel cam disposed within the half-nut housing and engaged with the cam follower surface between a first position and a second position to actuate the half-nut between the engaged position and the disengaged position.

22. A method comprising:

positioning a half-nut within a half-nut housing such that half-nut threads of the half-nut are at an end adjacent to a leadscrew void in the half-nut housing;

sliding the half-nut between an engagement position in which the half-nut threads engage with threads of a leadscrew and a disengaged position in which the half-nut threads are disengaged from the threads of the leadscrew; and

rotating a barrel cam engaged with a cam follower surface between a first position and second position to actuate the sliding of the half-nut between the engagement position and the disengaged position.

* * * * *